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EXAMINER	
IWASHKO, LEV	

ART UNIT	PAPER NUMBER
2186	

DATE MAILED: 01/30/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/817,617	SICOLA ET AL.	
	Examiner	Art Unit	
	Lev I. Iwashko	2186	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *22 August 2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *42-70* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *42-70* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *02 April 2004* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *08/22/05*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

2. Claims 42-46, 52-53, 55-59, 64, 66-67, and 69-70 are rejected under 35 U.S.C. 102(e) as being anticipated by Hanagan et al. (US PGPub 2001/0056362).

Claim 42. A method comprising steps of proactively monitoring for an occurrence of an event associated with operation of a distributed data storage system, *(Section 0279, lines 1-2 – Claim that there is an active monitoring feature)*

- characterizing the event as a usage event related to a usage rate of said system or a non-usage event not related to a usage rate of said system, *(Section 0196, lines 1-5 – Claim usage and non usage events)*
- adjusting a parameter of the data storage system when the event is characterized as a usage event, *(Section 0196, lines 14-16 – State that the data is stored in the Billing Event Database)*

- and executing a diagnostic routine when the event is characterized as a non-usage event. *(Section 0081, lines 1-12 – State that Order Processing (which may be a non-usage event), actively monitors tasks to generate alarms for potential error conditions)*

Claim 43. The method of claim 42, wherein the event is characterized as a scheduling condition associated with an elapsed period of time irrespective of usage rate of said system over said elapsed period of time, *(Section 0081, lines 26-32 – State the following: "If automatic activation is not possible--i.e. an order requires tasks to be done by workforce--sophisticated scheduling and optimization take place, where both the elapsed time to fulfill the order and workforce utilization are optimized, such that the schedule has the shortest possible critical path, and the workforce has minimal or no "gaps" in their schedule")*

- and wherein the scheduling condition is characterized by the characterizing step as a non-usage event. *(Section 0081, lines 26-31 – The is not change in system operating parameters)*

Claim 44. The method of claim 42, wherein the event is characterized as a scheduling condition associated with completion of a predetermined number of I/O data accesses by said system, *(Section 0350, lines 2-7 – State the following: "The parts of the invention that operate without direct user interaction are called "batch" and "stream I/O". Batch units of workload are initiated periodically, usually according to a pre-defined time schedule or by predictable arrival of an occasional event or file of events from an external system")*

- and wherein the scheduling condition is characterized by the characterizing step as a usage event. *(Section 0350, lines 18-21 – State the following: "Additional information about the processing mechanisms of batch and stream I/O processing (e.g., division of input into "units of work") and the scalability of the processing*

environment)". The above is important to note, since a usage event is one that comprises scheduled system adjustments)

Claim 45. The method of claim 42, wherein the event is characterized as a threshold event wherein an operating parameter has a value outside a predetermined threshold range, *(Section 0232, lines 1-4 – State the following: "CBM 18 may be cycle-driven for which documents are produced at regular intervals, or event-driven for which documents are produced on demand or when a certain threshold has been reached")*

- and wherein the scheduling condition is characterized by the characterizing step as a usage event. *(Section 0239, lines 1-2 – State that data is arranged according to specifications)*

Claim 46. The method of claim 42, wherein the event is characterized as a threshold event wherein an operating parameter has a value outside a predetermined threshold range, *(Section 0232, lines 1-4 – State the following: "CBM 18 may be cycle-driven for which documents are produced at regular intervals, or event-driven for which documents are produced on demand or when a certain threshold has been reached")*

- and wherein the scheduling condition is characterized by the characterizing step as a non-usage event. *(Section 0231, lines 1-3 – State that the Customer Billing Manager collects data, formats it, and created appropriate interfaces and documents. It does not change system operating parameters)*

Claim 52. The method of claim 42, further comprising a step of performing a component adjustment in said system in response to a result obtained during the executing step. *(Section 0081, lines 4-9 – State that the Order Processing step adjusts the component by ordering the tasks for completion)*

Claim 53. The method of claim 52, wherein the performing and executing steps are sequentially repeated to arrive at a final component adjustment in said system. *(Section 0081, lines 1-16 – Describes how the Order Processing*

step includes ordering tasks and then checking for errors in a sequential manner)

Claim 55. A distributed data storage system comprising at least one processor having associated programming *(Section 0411, lines 1-10, State the following: "Only two processes typically access the data within batch files, the first one creates it and the second receives it as input for the next step of processing in a chain of process steps. The passing of a file between processes guided by a control message indicating the name of the file. The location of these files is configurable using initialization parameters so that both processes and data files can reside on separate hardware platforms. For best performance, it is desirable that the work files used by a process be stored on disks that are local to the CPU running the processing")*

- to proactively monitor for an occurrence of an event associated with operation of said system, *(Section 0376, lines 3-5 – State the following: "In this case, C&M can start, stop (gracefully or immediately) and monitor processes to verify their current state (running or in error")*
- to characterize the event as a usage event related to a usage rate of said system or a non-usage event not related to a usage rate of said system, *(Section 0196, lines 1-5 – Claim usage and non usage events)*
- to adjust a parameter of the data storage system when the event is characterized as a usage event, *(Section 0196, lines 14-16 – State that the data is stored in the Billing Event Database)*
- and to execute a diagnostic routine when the event is characterized as a non-usage event. *(Section 0081, lines 1-12 – State that Order Processing (which may be a non-usage event), actively monitors tasks to generate alarms for potential error conditions)*

Claim 56. The system of claim 55, wherein the event is characterized as a scheduling condition associated with an elapsed period of time irrespective of usage

rate of said system over said elapsed period of time, *(Section 0081, lines 26-32 – State the following: "If automatic activation is not possible--i.e. an order requires tasks to be done by workforce--sophisticated scheduling and optimization take place, where both the elapsed time to fulfill the order and workforce utilization are optimized, such that the schedule has the shortest possible critical path, and the workforce has minimal or no "gaps" in their schedule")*

- and wherein the scheduling condition is characterized as a non-usage event. *(Section 0081, lines 26-31 – The is not change in system operating parameters)*

Claim 57. The system of claim 55, wherein the event is characterized as a scheduling condition associated with completion of a predetermined number of 1/0 data accesses by said system, *(Section 0350, lines 2-7 – State the following: "The parts of the invention that operate without direct user interaction are called "batch" and "stream I/O". Batch units of workload are initiated periodically, usually according to a pre-defined time schedule or by predictable arrival of an occasional event or file of events from an external system")*

- and wherein the scheduling condition is characterized as a usage event. *(Section 0350, lines 18-21 – State the following: "Additional information about the processing mechanisms of batch and stream I/O processing (e.g., division of input into "units of work") and the scalability of the processing environment)". The above is important to note, since a usage event is one that comprises scheduled system adjustments)*

Claim 58. The system of claim 55, wherein the event is characterized as a threshold event wherein an operating parameter has a value outside a predetermined threshold range, *(Section 0232, lines 1-4 – State the following: "CBM 18 may be cycle-driven for which documents are produced at regular*

intervals, or event-driven for which documents are produced on demand or when a certain threshold has been reached")

- and wherein the scheduling condition is characterized as a usage event. *(Section 0239, lines 1-2 – State that data is arranged according to specifications)*

Claim 59. The system of claim 55, wherein the event is characterized as a threshold event wherein an operating parameter has a value outside a predetermined threshold range, *(Section 0232, lines 1-4 – State the following: "CBM 18 may be cycle-driven for which documents are produced at regular intervals, or event-driven for which documents are produced on demand or when a certain threshold has been reached")*

- and wherein the scheduling condition is characterized as a non-usage event. *(Section 0231, lines 3-4 – State that CBM 18 refers to the Billing functionality too, which is a non-usage event)*

Claim 64. The system of claim 55, wherein the content of the first memory location comprises the diagnostic routine executed by said at least one processor. *(Section 0081, lines 1-12 – States the following: "The method of claim 49, wherein the content of the first memory location comprises the diagnostic routine executed during the executing step"), with the following: "Order Processing (OP) 22 provides active order processing, order management and service activation across a convergent platform. OP 22 accepts requests for work as input. The work request is analyzed to determine the tasks required to complete the request, as well as all scheduling dependencies that are required. The result is a workflow, identifying the proper order in which tasks must be completed, the estimated time required to perform a task, and the type of resource(s) required for each task. OP 22 actively monitors each task, generating alarms for potential error conditions, such as tasks failing to start or finish at their scheduled time")*

Claim 66. The system of claim 55, wherein the at least one processor further performs a component adjustment in said system in response to a result obtained during the execution of the diagnostic routine. *(Section 0081, lines 4-9 – State that the Order Processing step adjusts the component by ordering the tasks for completion)*

Claim 67. The system of claim 66, wherein the performing and executing operations are sequentially repeated to arrive at a final component adjustment in said system. *(Section 0081, lines 1-16 – Describes how the Order Processing step includes ordering tasks and then checking for errors in a sequential manner)*

Claim 69. An apparatus comprising a distributed data storage system comprising a host system, *(Section 0322, lines 5-9 – State the following: "The system also includes storage, such as disc or RAM, for storing the processes of the invention as well as upon which the processes can be distributed. The processes can also be distributed over a network, such as the Internet")*

- a storage controller, *(Section 0314, lines 1-8 – State the following: "Manageable: the software contains integrated support for control and management. The application-knowledgeable aspects of system management are handed within the AMS Class Library (ACL) Control and Management framework. Other aspects of system management (e.g., backup, disk, system, and database monitoring, can be performed using a third-party product of a provider's choice)")*
- a plurality of data storage devices, *(Section 0400, lines 1-4 – Disclose memory and disk file storage means)*
- and first means for proactively monitoring for an occurrence of an event associated with operation of a distributed data storage system, *(Section 0279, lines 1-2 – Claim that there is an active monitoring feature)*

- for characterizing the event as a usage event related to a usage rate of said system or a non-usage event not related to a usage rate of said system, *(Section 0196, lines 1-5 – Claim usage and non usage events)*
- for adjusting a parameter of the data storage system when the event is characterized as a usage event, *(Section 0196, lines 14-16 – State that the data is stored in the Billing Event Database)*
- and for executing a diagnostic routine when the event is characterized as a non-usage event. *(Section 0081, lines 1-12 – State that Order Processing (which may be a non-usage event), actively monitors tasks to generate alarms for potential error conditions)*

Claim 70. The apparatus of claim 69, wherein the first means comprises at least one processor with associated programming code in a memory location. *(Section 0386, lines 6-10 – Mention code)*

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 47 and 60 are rejected under 35 U.S.C.103(a) as being unpatentable over Hanagan et al. as applied to claims 42 and 55 above, further in view of Rossum (US Patent 6,138,207).

Hanagan teaches the limitations of claims 42 and 55 for the reasons above.

Hanagan 's invention differs from the claimed invention in that there is no specific reference to write cache memory.

Hanagan fails to teach claims 47 and 60, which state "The method of claim 42 (or 55), wherein the parameter adjusted during the adjusting step comprises an available amount of write

cache memory for storing data to be written to storage media of said system." However, Rossum 's invention discloses the following: "The request associated with this data is now considered accepted, its channel number is supplied via the acceptChannel and accept signals back to priority unit 66, the value of cacheInvalidSize and possibly cacheLoopFlag and loopInvalidSize within the register file are adjusted, and its parameters are passed to the cache write logic to compute the addresses and byte enables for writing the fetched data to cache 22" (Column 17, lines 22-29). It would have been obvious to one of ordinary skill in the art, having the teachings of the "Modular, Convergent Customer Care and Billing System" of Hanagan and Rossum 's "Interpolation Looping of Audio Samples in Cache Connected to System Bus With Prioritization and Modification of Bus Transfers in Accordance With Loop Ends and Minimum Block Sizes" before him at the time the invention was made, to combine the two inventions to include write cache memory so that data could be stored in a cache of a medium in an effective and efficient manner, thereby improving overall system efficiency.

5. Claims 48 and 61 are rejected under 35 U.S.C.103(a) as being unpatentable over Hanagan et al. as applied to claims 42 and 55 above, further in view of Rossum (US Patent 6,138,207).

Hanagan teaches the limitations of claims 42 and 55 for the reasons above.

Hanagan 's invention differs from the claimed invention in that there is no specific reference to a disk array.

Hanagan fails to teach claims 48 and 55, which state "The method of claim 42 (or 55), wherein the parameter adjusted during the adjusting step comprises an operational level of a disc array of said system." However, Rossum 's invention discloses the following: "The request associated with this data is now considered accepted, its channel number is supplied via the

acceptChannel and accept signals back to priority unit 66, the value of cacheInvalidSize and possibly cacheLoopFlag and loopInvalidSize within the register file are adjusted, and its parameters are passed to the cache write logic to compute the addresses and byte enables for writing the fetched data to cache 22" (Column 17, lines 22-29). A cache is a type of disk array. It would have been obvious to one of ordinary skill in the art, having the teachings of the "Modular, Convergent Customer Care and Billing System" of Hanagan and Rossum 's "Interpolation Looping of Audio Samples in Cache Connected to System Bus With Prioritization and Modification of Bus Transfers in Accordance With Loop Ends and Minimum Block Sizes" before him at the time the invention was made, to combine the two inventions to include a disk array that could be adjusted so that data could be stored in a cache of a medium in an effective and efficient manner, thereby improving overall system efficiency.

6. Claims 49 and 62 are rejected under 35 U.S.C.103(a) as being unpatentable over Hanagan et al. (US PGPub 2001/0056362) as applied to claims 42 and 55 above.

Hanagan teaches the limitations of claims 42 and 55 for the reasons above.

Hanagan 's invention differs from the claimed invention in that there is no specific reference to copying content before the execution step.

Hanagan fails to teach claim 49 and 62, which state "The method of claim 42 (or 55), further comprising a step of copying a content of a first memory location to a second memory location in said system prior to the executing step." However, Hanagan states "The location of these files is configurable using initialization parameters so that both processes and data files can reside on separate hardware platforms" (Section 0411, lines 5-8). The fact that Hanagan does not mention that this step is done prior to the execution step is irrelevant, as the sequence of

events does not change the purpose or functionality of the invention. Therefore, it would have been obvious for Hanagan's "Modular, Convergent Customer Care and Billing System" to copy content from a first to second memory before the execution step, so that the system would run in an efficient and sensible manner.

For further information, please reference Ex parte Rubin , 128 USPQ 440 (Bd. App. 1959) (Prior art reference disclosing a process of making a laminated sheet wherein a base sheet is first coated with a metallic film and thereafter impregnated with a thermosetting material was held to render prima facie obvious claims directed to a process of making a laminated sheet by reversing the order of the prior art process steps.). See also In re Burhans, 154 F.2d 690, 69 USPQ 330 (CCPA 1946) (selection of any order of performing process steps is prima facie obvious in the absence of new or unexpected results); In re Gibson, 39 F.2d 975, 5 USPQ 230 (CCPA 1930) (Selection of any order of mixing ingredients is prima facie obvious.).

7. Claims 50 and 63 are rejected under 35 U.S.C.103(a) as being unpatentable over Hanagan et al. as applied to claims 42, 49 and 55 above, further in view of Sutcliffe et al. (US Patent 6,073,105).

Hanagan teaches the limitations of claims 42, 49 and 55 for the reasons above.

Hanagan 's invention differs from the claimed invention in that there is no specific reference to arranging data in two formats in two locations.

Hanagan fails to teach claims 50 and 63, which state "The method of claim 49 (or 55), wherein the content of the first memory location comprises user data arranged in a first format, and wherein the copying step further comprises arranging said user data in a different second

format in the second memory location." However, Sutcliffe's invention discloses the following: "storing the account status report as a first file having a first predetermined file format in a first predetermined storage location on an audiotext system machine, transferring the first file from the audiotext system machine to a second file in a second predetermined file format in a second predetermined storage location of a server of a local area network and importing the file from the network server to the PON server for storage in a PON database. With this particular arrangement, a technique for retrieving information from one or more disparate databases for storage in a PON database is provided. The retrieved information corresponds to both user and client information. By having user and client information stored in a single PON database a PON system which can respond rapidly to user queries is provided." (Column 2, lines 30-44). It would have been obvious to one of ordinary skill in the art, having the teachings of the "Modular, Convergent Customer Care and Billing System" of Hanagan and Sutcliffe 's "Interactive Personals Online Network Method and Apparatus" before him at the time the invention was made, to combine the two inventions to include two different formats for data in two different storage locations upon copying, so that data would have a better chance of being preserved and secure.

8. Claim 51 is rejected under 35 U.S.C.103(a) as being unpatentable over Hanagan et al. (US PGPub 2001/0056362), as applied to claims 42 and 49 above.

Hanagan teaches the limitations of claims 42 and 49 for the reasons above.

Hanagan also teaches the limitations of claim 51 ("The method of claim 49, wherein the content of the first memory location comprises the diagnostic routine executed during the executing step"), with the following: "Order Processing (OP) 22 provides active order

processing, order management and service activation across a convergent platform. OP 22 accepts requests for work as input. The work request is analyzed to determine the tasks required to complete the request, as well as all scheduling dependencies that are required. The result is a workflow, identifying the proper order in which tasks must be completed, the estimated time required to perform a task, and the type of resource(s) required for each task. OP 22 actively monitors each task, generating alarms for potential error conditions, such as tasks failing to start or finish at their scheduled time" (Section 0081, lines 1-12). Claim 51 is rejected since Hanagan's "Modular, Convergent Customer Care and Billing System" successfully discloses all of its limitations.

9. Claims 54 and 68 are rejected under 35 U.S.C.103(a) as being unpatentable over Hanagan et al. (US PGPub 2001/0056362), as applied to claims 42 and 55 above.

Hanagan teaches the limitations of claims 42 and 55 for the reasons above.

Hanagan 's invention differs from the claimed invention in that there is no specific reference to copying content before the execution step, and then restoring the contents after the execution step.

Hanagan fails to teach claims 54 and 68, which state "The method of claim 42 (or 55), further comprising steps of copying a content of a first memory location to a second memory location in said system prior to the executing step, and restoring the content to the first memory location after the executing step." However, Hanagan states "The location of these files is configurable using initialization parameters so that both processes and data files can reside on separate hardware platforms" (Section 0411, lines 5-8). He also states that "it is desirable that the work files used by a process be stored on disks" (Section 0411, lines 8-9). The fact that

Hanagan does not mention that these steps are done prior/after to the execution step is irrelevant, as the sequence of events does not change the purpose or functionality of the invention. Therefore, it would have been obvious for Hanagan's "Modular, Convergent Customer Care and Billing System" to copy content from a first to second memory before the execution step, and then restore the content after the execution step, so that the system would run in an efficient and sensible manner.

For further information, please reference Ex parte Rubin , 128 USPQ 440 (Bd. App. 1959) (Prior art reference disclosing a process of making a laminated sheet wherein a base sheet is first coated with a metallic film and thereafter impregnated with a thermosetting material was held to render prima facie obvious claims directed to a process of making a laminated sheet by reversing the order of the prior art process steps.). See also In re Burhans, 154 F.2d 690, 69 USPQ 330 (CCPA 1946) (selection of any order of performing process steps is prima facie obvious in the absence of new or unexpected results); In re Gibson, 39 F.2d 975, 5 USPQ 230 (CCPA 1930) (Selection of any order of mixing ingredients is prima facie obvious.).

10. Claim 65 is rejected under 35 U.S.C.103(a) as being unpatentable over Hanagan et al. as applied to claim 55 above, further in view of Lee (US Patent 5,206,497).

Hanagan teaches the limitations of claim 55 for the reasons above.

Hanagan 's invention differs from the claimed invention in that there is no specific reference to two processors.

Hanagan fails to teach claim 65, which states "The system of claim 55, wherein a first processor from said at least one processor carries out said monitoring operation, and wherein a

second processor from said at least one processor carries out said adjusting and executing operations." However, Lee 's invention discloses the following: "In operation, processor/controller 109 adjusts the trajectory of beam 117 so that payload beam component 118 is directed onto a particular photo-receptor, thereby channeling the beam into an optical fiber and effecting an optical cross-connect. Typically, processor /controller 109 would receive the request to execute a particular cross-connect from a network manager or other processor which controls signal routing. To effect the cross-connect, image processor 114 scans CCD area sensor 108 and determines addresses of the elements which monitor beam component 119 (represented by the shaded circular area within target region 206) is incident upon. These addresses are passed to trajectory processor 115, which compares them to the element addresses for the target region corresponding to the particular photo-receptor to which payload beam component 118 is to be directed. Trajectory processor 115 then transmits a control signal to beam trajectory adjusting means 103 so as to alter the launch trajectory of collimated laser beam 117 and, thereby cause monitor beam component 119 to be incident upon the elements associated with the desired target location. Feedback on the position of monitor beam component 119 is received by trajectory processor 115 in the form of the addresses of the elements upon which monitor beam component 119 is incident. This feedback enables trajectory processor 115 to monitor and correct any errors in the positioning of beam 117 and, hence, payload beam component 118." (Column 3, lines 50-68 and Column 4, lines 1-10). It would have been obvious to one of ordinary skill in the art, having the teachings of the "Modular, Convergent Customer Care and Billing System" of Hanagan and Lee 's "Free-Space Optical Switching apparatus" before him at the time the invention was made, to combine the two inventions to include 2 processors that

would each undertake separate tasks, so that the system would run in a more specialized and efficient manner.

Conclusion

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lev I. Iwashko whose telephone number is (571)272-1658. The examiner can normally be reached on M-F (alternating Fridays), from 8-4PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matt Kim can be reached on (571)272-4182. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Lev Iwashko

MATTHEW D. ANDERSON
PRIMARY EXAMINER